

# All-Media Human Resource Management Information System Construction Practice: Exploring the Layout Strategy of Hyperlinked Organizations (Postprint)

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## Abstract

In the era of innovation, information technologies such as 5G, blockchain, “cloud brain,” and cloud computing are evolving at a rapid pace, rendering the “data human” increasingly tangible. Grounded in practice and oriented toward the future, this paper summarizes the experience in constructing the omnimedia human resource management information system of a certain party newspaper group. Following the thinking paradigm where data serves as the foundation, information as the pillar, and knowledge as the driving force, it explores the construction logic of data competency for omnimedia talents and the layout principles of hyperlinked organizations.

## Full Text

### Preamble

**Title:** Practice in Building an Integrated All-Media Human Resource Management Information System—Exploring the Layout of Hyperlinked Organizations (*Human Resources Department, Xinhua Newspaper Media Group, Nanjing, Jiangsu 210092*)

**Abstract:** In this era of innovation, information technologies such as 5G, blockchain, cloud brain, and cloud computing are evolving rapidly, making the 轮廓 of “data-driven individuals” increasingly tangible. Grounded in practice and oriented toward the future, this paper summarizes experiences from constructing an all-media human resource management information system at a Party newspaper group. Following the paradigm of “data as foundation, information as pillar, and knowledge as driving force,” it explores the logic for building all-media talent data capabilities and the layout principles for hyperlinked organizations.

**Keywords:** All-Media; Human Resources; Big Data; Information System; Hyperlink

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In the Industry 4.0 era, information technology is developing rapidly, networks cover all of society, massive data streams are surging forward, and the in-depth development of media convergence brooks no delay. Only by actively embracing the all-media era, conforming to technological laws, and seizing the big data wave can we grasp the pulse of the times and fulfill the new mission of human resource management for Party newspaper groups in the new era, thereby effectively cultivating, developing, and managing all-media talent. In September 2020, the “Opinions on Accelerating the In-Depth Development of Media Convergence” issued by the General Office of the Communist Party of China Central Committee and the General Office of the State Council comprehensively advanced the pace of media convergence. Among the factors touching the deep reform of media convergence—mechanism and system, technological innovation, all-media talent, and ideological emancipation—can all be summarized as “human” factors. [1]

## 1. Constraints on HR Development in Party Newspaper Groups in the New Era

### 1.1 Management System Constraints

Most newspaper groups operate under a “public institution nature with enterprise-style management.” In an era when the media industry is undergoing deep reform and facing the test of full market competition, the management problems and personnel contradictions brought by the internal dual-track system have become increasingly prominent. This is especially true regarding the complex composition of non-staff employment and the overall lack of career planning among journalism practitioners, which have caused human resource management mechanisms for talent allocation and mobility, performance evaluation and incentives to lag far behind market requirements and employee needs.

### 1.2 Technical Data Constraints

Internal management methods in newspaper groups have not adequately utilized information technology. The management of “people” remains primarily arranged

according to traditional administrative institution attributes, with the modern media group management technology application system being imperfect and its advantages not fully realized. The group's internal management data is vast but scattered and difficult to collect, resulting in passive data silos. Various types of talent data have not yet been integrated, shared, or utilized for management effectiveness, making it impossible to serve the career development needs of journalists and other staff.

### **1.3 Talent Transformation Constraints**

The rapid impact of new media has forced traditional media professionals to seek transformation or advancement due to career confusion. Newspaper groups urgently need new media, technical, operational, and management talents, yet face difficulties in both recruitment and retention. The slow optimization of traditional personnel management mechanisms and systems has deeply constrained the transformation and activation of existing media human resources as well as the innovative development of new additions.

## **2. System Construction Innovation: Achieving Full Data Aggregation, Information Flow, and Integrated Mapping**

The essence of building an all-media human resource management information system in the new era is to use scientific methods and advanced technology to carry out HR management innovation, bridging tradition and modernity, theory and practice, and introducing management transformations that achieve optimal personnel allocation and efficient operations, thereby enhancing the networking, digitalization, and intelligentization of human resource management. This paper summarizes system construction experiences from three aspects: platform-based system construction, information base building, and integrated applications. It elaborates on the talent data capability construction logic of the "Five All" database, "Five Link" information flow, and "Portrait" knowledge graph, thereby proposing the future hyperlinked organizational layout for media organizations.

The system should match the all-media news production mechanism of Party newspaper groups, building a technologically advanced, superior in user experience, and highly secure HR management platform embedded with multiple HR business subsystems and comprehensive application display systems. The system enables full staff login, extending management and service tentacles to the nerve endings, supporting unit, team, and individual application scenarios, and supporting multi-dimensional, scientific, and personalized application and management authority allocation. This achieves two-way information interaction, process verification of data, and highly secure management. The system can meet the needs of managers at all levels, HR professionals, and employees within the newspaper group, realizing the standardization, proceduralization, and normalization of cadre and personnel work. Simultaneously, it implements vertical layering and network control, gradually transitioning toward a hyper-

linked organizational structure. The system not only uses technical means to improve work efficiency, freeing HR professionals from tedious daily data and materials work, but also enables high-level extraction and integration of comprehensive and accurate data information related to “people,” breaking down data barriers and subset boundaries, producing knowledge graphs for converged media talents, and gradually moving toward “talent portrait” management. This can be summarized as “multi-channel water diversion” for data aggregation, “internal-external circulation” for information flow, and “extraction and integration” for knowledge graphs. The design concepts and technical framework are shown in Figure 1 [Figure 1: see original paper] and Figure 2 [Figure 2: see original paper].

### **3. From Data to Data Aggregation: Platform-Based Management Generates the “Five All” Talent Database**

The original personnel management system of the newspaper group was cumbersome to maintain and had narrow collection channels, unable to gather the organization’s vast historical and current personnel data from various internal management functions. Manual entry speed could not keep pace with daily personnel changes. The development of news operations and business expansion has made the original enterprise-employment system more diversified and dynamic, with increasingly frequent internal and external personnel mobility and transfers. In response to new situation development requirements and focusing on the characteristics of massive HR data and fragmented information, the system adopts “standardizing data standards—efficient network access—internal-external network information exchange—collaborative data analysis” as its main line. Based on converged media talent big data, it develops platform-based management, sets up multi-dimensional synchronous collection points, and integrates various types of employment in Party newspaper groups around the “Five All” principles: full staff, full process, full workflow, full cycle, and full orientation, establishing a “Five All” core database and achieving breakthroughs in system technology application in the following areas. [2]

#### **3.1 Unified Identification, Full Staff Login**

All personnel—including institutional staff, contract employees, temporary workers, dispatched workers, and part-time staff in the group company and its branches and subsidiaries—use their ID number as the unique identifier. Through online processing of onboarding or office occupancy, personnel information is refreshed in a timely manner.

#### **3.2 Unified Management, Full-Process Database**

The system supports multiple personnel existence states in the group company, as well as all historical and future personnel data, establishing separate management for three major personnel databases: potential temporary, current reg-

istered, and retired/resigned, with full-process, dynamic transfer capabilities.

### **3.3 Standardized Handling, Full-Workflow Control**

The system standardizes and embeds custom approval procedures for business processes in each subsystem, flexibly applying integrated disposal processes such as “collect, review, gather, distribute, handle, and feedback.” It sets up multiple management roles and permissions with associated operations and data verification.

### **3.4 Career Planning, Full-Cycle Management**

According to the professional characteristics of journalism practitioners, the system establishes data tags for career cycles including newcomer, growth, exploration, maturity, and decline, covering cadre full-process documentation, contract management, title appointment, press cards, talent awards, and performance compensation.

### **3.5 Multi-Dimensional Display, Full-Orientation View**

The system meets the technical requirements for full-channel access via PC, Pad, and mobile phone across different application scenarios, constructing comprehensive talent models including personnel files, performance trends, training development, and personality traits, along with brand-new human-computer interaction interfaces.

In summary, the system achieves smooth “multi-channel water diversion,” consolidating the data foundation and maintaining a dynamic process of data flow and aggregation, thereby solving the data collection challenge for future hyperlinked organizational formation.

## **4. From Static to Flowing: Cross-Departmental Collaboration Drives “Five Link” Personnel Information Flow**

In the “Internet + Society” era, all industries are using technical means to seek interactive and complementary development as well as deep integration and co-construction. Traditional personnel services operate independently with different responsible departments, and the administrative organizational hierarchy of traditional media emphasizes resource segmentation and separate control and management. This results in static personnel data and minimal information interaction and flow in media organizations. However, data is like water and information is like flow; modern system construction must use technology as channels to find the driving force for data correlation and information flow based on data aggregation. The data and information in the all-media human resource management information system are generated around “people.” Personnel information involves screening, processing, and creating raw data to generate meaningful associated data. The system discussed here has designed

over 100 data indicators for behaviors, results, and characteristics, as well as more than 30 subsets for organizational structures and business control, plus various process records such as access cards and press cards.

#### **4.1 Intelligent Monitoring of Personnel Flow**

Personnel dynamic flow is the basic flow and also the technical difficulty for effective personnel control. The first step in personnel entry is identifying the unique personnel identifier to eliminate duplication and find associations. Through online processes for onboarding, transfer, and departure, the system achieves distributed accounting and intelligent 增减 (increase/decrease).

#### **4.2 Continuous Linking of Information Flow**

From a work relationship perspective, individual, team, and group data, as well as social data, should mutually integrate. The system can couple with other systems such as media editing, financial management, converged operations, and all-media assessment to maximize social and economic benefits.

#### **4.3 Deep Integration of Business Flow**

The selection, utilization, and motivation of newspaper group cadres and talent both reflect an individual's development path within the institutional system and their career trajectory within the enterprise. The system can break down the dual identity information barriers between the two systems and demonstrate the value of identity integration.

#### **4.4 Process Reengineering Management Flow**

Through the VPN intranet, the system enables collaborative use by the group and its affiliated units, leaders at all levels, functional business departments, and employees, transforming the HR department's "solo combat" into "multi-departmental collaborative combat" to achieve process reengineering and drive management transformation.

#### **4.5 Application Adhesion Service Flow**

Service flow is the key point of interaction between the system and employees. By mandating use and providing services to force data updates—such as academic advancement, new training, and certification usage—the system achieves shared data, adequate service delivery, and creation of human-computer interaction.

In summary, the system achieves smooth "pool water diversion," constructing information pillars and creating momentum for data cross-boundary association, thereby solving the data management challenge for future hyperlinked organizational formation.

## 5. From Decomposition to Reconstruction: Aggregated Composition Achieves Precise “Graph” Mapping

Knowledge is the concentrated embodiment of human social development and wisdom. The identification, evaluation, and cultivation of individuals and teams directly determine the success of cadre and talent 队伍建设 (team building) and utilization in newspaper groups. The construction and development of this system aims to create a group cloud brain. Based on big data and information flow, it integrates and refines complete knowledge graphs for individuals or teams, visually displaying talent educational structure, resume development, professional fields, and trend predictions, as shown in Figure 3 [Figure 3: see original paper].

The system covers analytical functions for talent structure, position changes, and personalized comparisons across hundreds of unit departments in the group and its subsidiaries, achieving leadership team management, cadre information management, talent selection and appointment, comprehensive inquiry, and comprehensive analysis and judgment. It meets the big data foundation needed for talent selection decision-making and the personalized needs of micro talent management, effectively realizing efficient retrieval of massive data, standardized and orderly information flow, and associated comparison and integrated analysis of characteristic individuals and groups, providing a precise, integrated, and convenient talent application solution for newspaper group leadership. The system supports aggregated analysis of talent learning ability, business ability, innovation ability, personality characteristics, and internal qualities, drawing educational analysis charts, knowledge reserve charts, competency charts, experience growth charts, and development trend charts to identify the development potential of converged media talents.

In summary, the system achieves unique “insightful talent recognition,” outlining knowledge graphs and innovating multi-dimensional and multi-directional reorganization of data and information, thereby solving the data matching challenge for future hyperlinked organizational formation.

In recent years, with the rapid popularization of the Internet and extensive penetration of informatization, the superimposed derivation of application needs such as ubiquitous acquisition, digital virtualization, and high-speed transmission has triggered explosive growth of information data, giving rise to revolutionary technological breakthroughs such as big data and artificial intelligence. Big data has risen from a fundamental strategic resource to a national strategy, becoming not only a technology for enhancing informatization capabilities but also a value system and methodology for liberating thought and transforming concepts. [3] Under this new era background, newspaper groups must correctly establish big data thinking concepts, gather and integrate diversified information resources for talent business, accurately interpret multi-dimensional trajectory characteristics of talent data, scientifically construct efficient personnel selection mechanisms, and promote the transformation of all-media talent and organiza-

tional personnel work from perceptual, manual operations to data-driven development, digital scanning, and intelligent mining models. The system should be utilized to realize the massive, associative, and searchable value of all-media human resource big data, opening up systematic application capabilities for data quantification, precise talent recognition, and personnel utilization. Simultaneously, it should leverage the powerful organizational potential energy of future flattening, platformization, and aggregation, releasing the fundamental driving force and management dividends for Party newspaper groups to adapt to the changing market environment and achieve sustainable and healthy development, along with talent competitiveness.

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*Note: Figure translations are in progress. See original paper for figures.*

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